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## Evaluating West Virginia Organic Heritage Beans for Commercial Markets in West Virginia

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Beans, corn and squash have been cultivated in the Appalachian mountains for thousands of years starting with the Native Americans and pioneers. Heirloom beans, in particular, are considered heritage crops by many West Virginians. Selected varieties have excellent horticultural traits that allow them to be well adapted to the mountain environment. There may also be an opportunity to produce heirloom beans for commercial markets in West Virginia.

### Materials and Methods

The first of a series of evaluations began in early June 2015 when 12 varieties of West Virginia heirloom bean were planted at the WVU Organic Farm in Morgantown, West Virginia (Figure 1). Each seed was planted 4 inches apart in plots which were 5 feet long. Each variety was replicated 3 times in a randomized complete block experimental design. The varieties evaluated were indeterminate pole bean varieties with unique names and characteristics, such as *Turkey Crow*, *Rattlesnake*, *Logan Giant*, *Fat Man*, *October Tender Hull*, *Coal Camp*, *Williams River*, *Ground Squirrel*, *White Greasy Pole*, *Speckled Christmas*, *Aunt Glenda's Pole Bean*, and *Flood Bean*. Many of the varieties were obtained from Flanagan's Farm in Nicholas County, West Virginia. The beans were distinct colors ranging from black, brown and white to mottled seed coats (Figure 1). All varieties exhibited excellent growth and were easy to grow organically. All varieties were trellised using a mesh plastic trellis supported by metal posts. Weed control was achieved by growing the beans in a 4-mm-thick black ground cover mulch. The beans were fertilized at planting with an application of 4-3-4 pelletized organic poultry litter to apply a rate equivalent to 60lbs of N/acre. No additional fertilizer was applied to the planting. Insects were controlled using *Pyganic* insecticide. The beans' vigorous vines rapidly covered the trellises and were harvested after drying. Then, the beans were mechanically shelled and bagged in early October. Dry weight of the shelled beans was recorded. The beans were test marketed at the West Virginia Small Farms Conference in Charleston, WV in February 2016.



**Figure 1.** Heirloom beans were trellised and harvested as dry beans.

## Results and Discussion

Some pole beans are dried in the pods and shelled for cooking. Most pole beans, bush beans and half runners are harvested fresh, and eaten or canned before the bean fills out when the pods are still tender. The objective of this project was to evaluate heritage pole beans as dry beans. Fresh beans could potentially yield more, but there would be significantly more harvest labor required. In addition, dry beans can be stored and sold over many months. The beans dried on the vines and were harvested in one picking. A mechanical sheller was used to shell the varieties. Fifty to sixty pounds of beans could be shelled in one hour. High-yielding varieties included *Logan Giant*, which produced a medium brown seed; *October Tender Hull*, which had a light brown seed with maroon streaks; and *Fat Man* and *White Greasy Pole*, which had high yields of white beans (Table 1). *Coal Camp* and *Williams River* were excellent black/brown beans.

Winter markets, such as farmers markets, CSA (Community Supported Agriculture) and restaurants, are viable market outlets for heirloom dry beans. Organic heirloom beans can be sold for \$3-4/lb. Sales at the “Winter Blues Farmer’s Market” at the West Virginia Small Farms Conference were very good. Consumers preferred mixed varieties of beans with a diversity of colors.

### Preserving Heirloom Beans

West Virginians have selected and saved seeds from beans varieties for generations. Heirloom varieties, diverse with unique color and flavor, are genetic treasures that must be preserved for future gardeners not only in the Appalachian region, but the entire world.

When saving bean seeds, it is important to isolate varieties by 25 to 50 feet. The beans can be dried in the pods on the plant, or taken inside and dried before shelling. The seeds should be stored in jars or plastic bags in a cool location until planting the following spring or summer.

**Table 1.** Evaluation of heirloom West Virginia beans.

Variety	Wt. (dry) ozs. <sup>z</sup>	lbs./acre	Seed Color
Aunt Glenda’s	16.4	2233	Brown/Red Mottled
Coal Camp	14.6	1987	Brown/Black
Fatman	19.6	2668	White
Flood	16.8	2287	Black
Greasy Pole	21.3	2900	White
Ground Squirrel	11.0	1497	Brown/Black Streaks
Logan Giant	17.3	2355	Brown
Oct. Tender Hull	20.5	2791	Light brown with maroon streaks
Rattlesnake	12.9	1756	Brown/Black Streaks
Speckled Christmas	4.1	558	Mottled
Turkey Crow	15.1	2056	Brown
Williams River	13.0	1770	White
<i>Average</i>	<i>15.3</i>	<i>2083</i>	
<i>Standard error</i>	<i>0.9</i>	<i>123</i>	

<sup>z</sup>Yield/20ft<sup>2</sup>